by the Yesmann formula. For descending roofs, it will be greater.
In his work, Professor Yesmann has given the mathematical expression for the first case, but he has introduced certain coefficients of friction for which no accurate data exist at present.

In what measure is actual usage found to accord with this formula. For verifying Yesmann's formula, a test furnace has been built at the Polytechnic Institute of Petrograd; but during the time that it has been in service it has been impossible to obtain a gaseous current with a lower free surface or nappe which

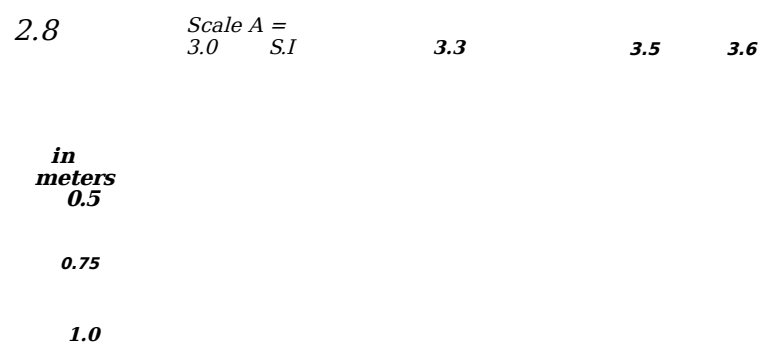

FIG. 26.—Values of Coefficient *A*.

was free from eddies. In this current of gases the surface is mixing with air. For this reason the measurement of the thickness of the gaseous stream is difficult. It is hoped that this difficulty may be overcome, and that it will be possible to effect the verification of the formula for the flow of gases under inverted weirs by accurate methods. In the meantime, Yesmann's formula has been tested by application to furnaces which were in use. The tests have been based upon the assumption that since the furnace works well and the shop is satisfied, the hot gases which flow in the inverted channel must lick the hearth of the furnace in a satisfactory manner.

The reverberatory furnace itself forms a true inverted channel